

1. A computer-implemented method for using a device embedded in an apparatus to report the state of the apparatus to a remote computer, comprising:

detecting the state of the apparatus;

5 generating an electronic mail message that reports the state of the apparatus using a self-describing computer language; and

sending the electronic mail message to the remote computer.

10

2. The method of claim 1, wherein the state is indicative of an error condition in the apparatus.

3. The method of claim 2, wherein the error condition  
15 comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

4. The method of claim 1, wherein detecting the state comprises receiving the state from the apparatus.

20

5. The method of claim 1, wherein detecting the state comprises retrieving the state periodically from the

apparatus.

6. The method of claim 1, wherein detecting the state comprises:

5 obtaining an identifier for the apparatus, the identifier relating to the state of the apparatus; and reading the state from the apparatus using the identifier.

10 7. The method of claim 1, further comprising: determining if the state of the apparatus has changed; wherein the electronic mail message is generated if the state of the apparatus has changed.

15 8. The method of claim 7, wherein determining comprises comparing the state received from the apparatus to a previous state of the apparatus.

9. The method of claim 1, wherein the self-describing  
20 computer language comprises eXtensible Markup Language (XML).

10. The method of claim 1, wherein the electronic mail message is generated using a predefined template, the electronic mail message being generated by:

obtaining one or more variables relating to the  
5 apparatus; and  
inserting the one or more variables into the template.

11. The method of claim 1, wherein the state of the apparatus is included as part of a body of the electronic  
10 mail message.

12. The method of claim 1, wherein the state of the embedded device is included as part of an attachment to the electronic mail message.

15 13. A computer-implemented method for obtaining a state of an apparatus from a device embedded in the apparatus, comprising:

receiving an electronic mail message that reports the  
20 state of the apparatus using a self-describing computer language; and

extracting the state of the apparatus from the

electronic mail message.

14. The method of claim 13, wherein the self-  
describing computer language comprises eXtensible Markup  
5 Language (XML).

15. The method of claim 13, wherein the state is  
indicative of an error condition in the apparatus.

10 16. The method of claim 15, wherein the error  
condition comprises a variable that deviates from an  
acceptable value or a predetermined range of acceptable  
values.

15 17. The method of claim 13, further comprising  
passing the state of the apparatus to a customer  
relationship management system.

18. A computer program stored on a computer-readable  
20 medium for reporting the state of an apparatus to a remote  
computer, the computer program comprising instructions that  
cause an embedded device in the apparatus to:

detect the state of the apparatus;  
generate an electronic mail message that reports the  
state of the apparatus using a self-describing computer  
language; and  
5 send the electronic mail message to the remote  
computer.

19. The computer program of claim 18, wherein the  
state is indicative of an error condition in the apparatus.

10 20. The computer program of claim 19, wherein the  
error condition comprises a variable that deviates from an  
acceptable value or a predetermined range of acceptable  
values.

15 21. The computer program of claim 18, wherein  
detecting the state comprises receiving the state from the  
apparatus.

20 22. The computer program of claim 18, wherein  
detecting the state comprises retrieving the state  
periodically from the apparatus.

23. The computer program of claim 18, wherein  
detecting the state comprises:

obtaining an identifier for the apparatus, the  
5 identifier relating to the state of the apparatus; and  
reading the state from the apparatus using the  
identifier.

24. The computer program of claim 18, further  
10 comprising instructions that cause the embedded device to:  
determine if the state of the apparatus has changed;  
wherein the electronic mail message is generated if  
the state of the apparatus has changed.

15 25. The computer program of claim 24, wherein  
determining comprises comparing the state received from the  
apparatus to a previous state of the apparatus.

26. The computer program of claim 18, wherein the  
20 self-describing computer language comprises eXtensible  
Markup Language (XML).

27. The computer program of claim 18, wherein the electronic mail message is generated using a predefined template, the electronic mail message being generated by:

obtaining one or more variables relating to the  
5 apparatus; and  
inserting the one or more variables into the template.

28. The computer program of claim 18, wherein the state of the apparatus is included as part of a body of the  
10 electronic mail message.

29. The computer program of claim 18, wherein the state of the apparatus is included as part of an attachment to the electronic mail message.

15

30. A computer program stored on a computer-readable medium for obtaining a state of an apparatus from a device embedded in the apparatus, the computer program comprising instructions that cause a processor to:

20 receive an electronic mail message that reports the state of the apparatus using a self-describing computer language; and

extract the state of the apparatus from the electronic mail message.

31. The computer program of claim 30, wherein the  
5 self-describing computer language comprises eXtensible Markup Language (XML).

32. The computer program of claim 30, wherein the  
state is indicative of an error condition in the apparatus.

10

33. The computer program of claim 32, wherein the error condition comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

15

34. The computer program of claim 30, further comprising instructions that cause the processor to pass the state of the apparatus to a customer relationship management system.

20

35. A device embedded in an apparatus for reporting the state of an apparatus to a remote computer, the



embedded device comprising circuitry which:

detects the state of the apparatus;

generates an electronic mail message that reports the  
state of the apparatus using a self-describing computer

5 language; and

sends the electronic mail message to the remote  
computer.

36. The device of claim 35, wherein the state is  
10 indicative of an error condition in the apparatus.

37. The device of claim 36, wherein the error  
condition comprises a variable that deviates from an  
acceptable value or a predetermined range of acceptable  
15 values.

38. The device of claim 35, wherein detecting the  
state comprises receiving the state from the apparatus.

20 39. The device of claim 35, wherein detecting the  
state comprises retrieving the state periodically from the  
apparatus.

40. The device of claim 35, wherein detecting the state comprises:

obtaining an identifier for the apparatus, the  
5 identifier relating to the state of the apparatus; and  
reading the state from the apparatus using the  
identifier.

41. The device of claim 35, wherein:  
10 the circuitry determines if the state of the apparatus  
has changed; and

the electronic mail message is generated if the state  
of the apparatus has changed.

15 42. The device of claim 41, wherein determining  
comprises comparing the state received from the apparatus  
to a previous state of the apparatus.

43. The device of claim 35, wherein the self-  
20 describing computer language comprises eXtensible Markup  
Language (XML).

44. The device of claim 35, wherein the electronic mail message is generated using a predefined template, the electronic mail message being generated by:

obtaining one or more variables relating to the  
5 apparatus; and

inserting the one or more variables into the template.

45. The device of claim 35, wherein the state of the apparatus is included as part of a body of the electronic  
10 mail message.

46. The device of claim 35, wherein the state of the apparatus is included as part of an attachment to the electronic mail message.

15

47. The device of claim 35, wherein the circuitry comprises a memory which stores executable instructions and a processor which executes the instructions.

20

48. The device of claim 35, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

49. A first apparatus for obtaining a state of a second apparatus from a device embedded in the second apparatus, the first apparatus comprising circuitry which:

5 receives an electronic mail message that reports the state of the second apparatus using a self-describing computer language; and

extracts the state of the second apparatus from the electronic mail message.

10

50. The first apparatus of claim 49, wherein the self-describing computer language comprises eXtensible Markup Language (XML).

15

51. The first apparatus of claim 49, wherein the state is indicative of an error condition in the second apparatus.

20

52. The first apparatus of claim 51, wherein the error condition comprises a variable that deviates from an acceptable value or a predetermined range of acceptable values.

53. The first apparatus of claim 49, wherein the circuitry passes the state of the second apparatus to a customer relationship management system.

5 54. The first apparatus of claim 49, wherein the circuitry comprises a memory which stores executable instructions and a processor which executes the instructions.

10 55. The first apparatus of claim 49, wherein the circuitry comprises one or more of an application-specific integrated circuit and a programmable gate array.

15 56. A system comprising:  
a first device comprising circuitry which generates an electronic mail message reporting a state of an apparatus using a self-describing computer language, and  
a second device, in communication with the first  
20 device, the second device comprising circuitry which receives the electronic mail message from the first device.

57. The system of claim 56, wherein the circuitry in the second device extracts the state of the apparatus from the electronic mail message.

5 58. The system of claim 56, wherein the first device is embedded in the apparatus and the second device comprises a remote computer.